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CORRESPONDENCE

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Disc edema in one eye and central serous chorioretinopathy in the other eye shortly after AstraZeneca COVID-19 vaccination

Dear Editor,

Ocular adverse effects associated with various types of vaccine, mainly including optic neuropathy and uveitis have been widely reported for several decades.[1] The commonly reported include vaccines for hepatitis B virus (HBV; 40.5%), human papillomavirus (HPV; 15.6%), and influenza virus (9.7%).[2] Probable mechanisms include direct infection of the attenuated pathogen, molecular mimicry resulting hypersensitivity, and adjuvants-induced inflammation.[2] Here, we present a case who developed optic disc edema in one eye and central serous chorioretinopathy (CSC) in the other eye shortly after receiving COVID-19 vaccine.

A 41-year-old Asian female without systemic disease presented to our hospital with foggy vision in the right eye and inferior visual field defect in the left eye after receiving her first COVID-19 vaccine (Vaxzevria, AstraZeneca) 2 days previous. The vision on presentation was 20/20 oculus dexter (OD) and 20/30 oculus sinister (OS). Intraocular pressure was normal and the pupillary light reflex was equally reactive in both eyes. Anterior segment examination was unremarkable in both eyes. Dilated fundus examination revealed disc edema (OD) (Figure 1A) and a dome-shape serous detachment over the upper arcade (OS) (Figure 1B). Fluorescein angiography showed disc edema with dye leakage (OD; Figure 1C) and a single point of hyperfluorescence with focal area of retinal pigment epithelium (RPE) decompensation over the temporal superior vessel arcade (OS; Figure 1D). Brain imaging revealed no optic nerve inflammation or compression. She denied using any medications currently. Review of systems and laboratory studies including inflammatory and infectious markers reported unremarkable findings.

Under the impression of idiopathic optic disc edema (OD) and CSC (OS), she was under regular follow-up at the clinic without invasive treatment. During follow-up, disc edema (OD) and serous retinal detachment (OS) gradually resolved spontaneously. At the visit of six-week follow-up, the disc edema (OD) and the serous detachment (OS) were both reduced (Figure 1E,F) with best corrected visual acuity (BCVA) restored to 20/20 (OD) and 20/25 (OS). At the visit of three-month follow-up, there were no disc edema (OD; Figure 1G) or serous detachment (OS; Figure 1H). BCVA was 20/20 in both eyes and the patient had no ocular symptoms remaining.

Various types of vaccine against COVID-19 with different mechanisms are now available. Of these, viral vector vaccine against COVID-19 from AstraZeneca recently confirmed that it may induce inflammatory disease, such as immune thrombotic thrombocytopenia.[3] We present a case of disc edema in the right eye and CSC in the left eye shortly after the first dose of AstraZeneca COVID-19 vaccine. To the best of our knowledge, this is the first case report of different intraocular complications associated with COVID-19 vaccine that simultaneously occurred in both eyes. From literature review, Benedikt et al. reported a case with bilateral acute macular

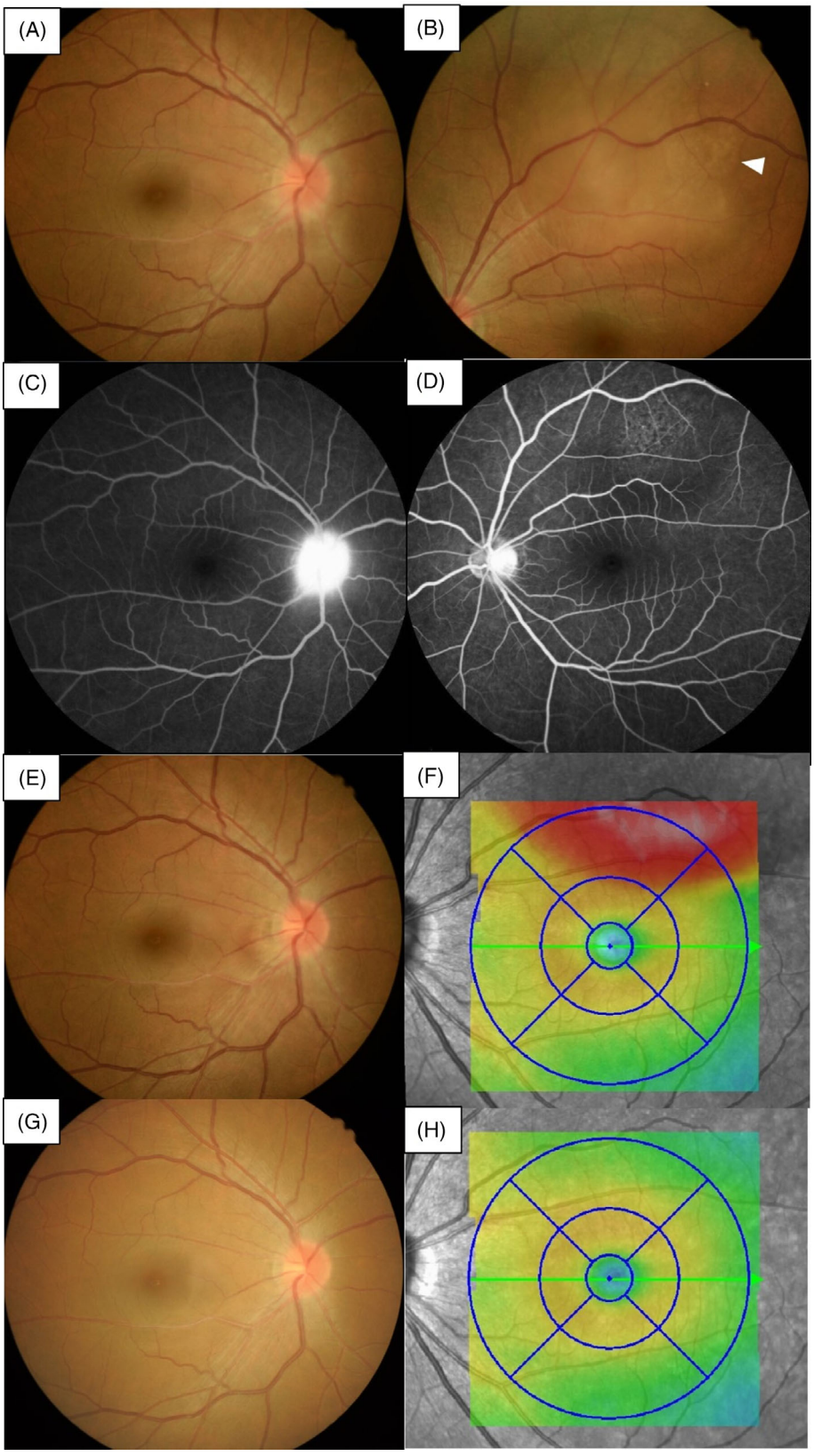

FIGURE 1 Fundus images of the patient. (A) Initial fundus photography of the right eye shows optic disc edema. (B) Initial fundus photography of the left eye shows focal area of RPE change (arrowhead) with surrounding serous retinal detachment over the upper arcade. (C) Initial fluorescein angiography of the right eye displays dye leakage of the optic disc at late phase. (D) Initial fluorescein angiography of the left eye displays a single point of hyperfluorescence with focal area of RPE decompensation over temporal superior vessel arcade. (E) Fundus photography of the right eye at 6-week visit shows partial resolution of disc edema. (F) OCT thickness map of the left eye at 6-week visit displays partial resolution of serous retinal detachment. (G) Fundus photography of the right eye at 3-month visit shows complete resolution of disc edema. (H) OCT thickness map of the left eye at 3-month visit displays complete resolution of serous retinal detachment

neuroretinopathy 3 days after first COVID-19 vaccine (Vaxzevria, AstraZeneca]).[4] Mallika et al. also reported a case of bilateral multifocal choroiditis following COVID-19 vaccination in India.[5] With the increasing coverage rate of COVID-19 vaccine, ophthalmologists should consider various inflammatory ocular problems which may be an adverse effect following COVID-19 vaccination.

CONFLICT OF INTEREST

All authors declare no conflict of interest.

Daniel Yu Lee[1]
Horng-Jiun Wu[1]
Kai-Chun Cheng[2,3]
Yo-Chen Chang[3,4]

[1]*Department of Ophthalmology, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan*
[2]*Department of Ophthalmology, Kaohsiung Municipal Siaogang Hospital, Kaohsiung Medical University, Kaohsiung, Taiwan*
[3]*Department of Ophthalmology, School of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan*
[4]*Department of Ophthalmology, Kaohsiung Municipal Ta-Tung Hospital, Kaohsiung Medical University, Kaohsiung, Taiwan*

Correspondence
Yo-Chen Chang, Department of Ophthalmology, Kaohsiung Medical University. No.100, Shih-Chuan First Rd. Kaohsiung, 80708, Taiwan.
Email: ycchang@kmu.edu.tw

ORCID

Daniel Yu Lee https://orcid.org/0000-0003-0449-6018

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